

Fiorella Frank

Fiorella-Frank94@gmx.de

Gollierplatz 18

80339 München

Germany

Fiorella Frank holds a Master's degree in Business Administration from the Ingolstadt School of Management, Catholic University of Eichstaett-Ingolstadt, Germany. She currently works as an HR-consultant.

Julia Winterstein

Julia.winterstein@stud.ku.de

Waldweg 9

86424 Dinkelscherben

Germany

Julia Winterstein is a PhD candidate at Ingolstadt School of Management, Catholic University of Eichstaett-Ingolstadt, Germany. Her research focuses on sustainability management, especially sustainable food supply. Winterstein holds a Master's degree in Business Administration.

Prof. André Habisch

Andre.habisch@ku.de

Auf der Schanz 49

85049 Ingolstadt

Germany

Professor André Habisch serves as the Chairperson of the Department of Christian Social Ethics and Social Policy at Catholic Universität of Eichstätt-Ingolstadt in Germany. He is specialized in the field of CSR, Sustainability Development, Business Ethics and Innovation.

Desire for exploration beats price: Empirical study on customer motives for using digital monetary food sharing platforms

Abstract

Fourteen per cent of the global food produced is wasted every, posing an environmental, ecological, and social problem. Digital monetary food sharing platforms have been proposed to reduce food waste by a more efficient use of resources. Yet, literature did not inquire the motivation of consumers to use the platforms. Hence, this paper intends to fill the gap by contributing to the literature on a (food) sharing economy. This study is the first that empirically investigates motives to use monetary food sharing platforms in Germany. We use an exploratory sequential mixed-method approach combining in-depth interviews with a quantitative online survey. Our results suggest that intrinsic motives have a stronger influence than extrinsic motives: the desire to explore new food was more strongly correlated to the behavioural intention to use the platforms than perceived economic benefit and sustainable motives. Concluding, the research deduces theoretical and managerial implications for different stakeholders.

1 Introduction

Fourteen per cent of the food produced worldwide is wasted every year (FAO 2019). Broken down to the European Union, this corresponds to 88 million tons of food waste per year (European Commission 2016). Households and the food industry are responsible for forty per cent of food waste. This extremely high percentage rate is due to products deviating from the optimal shape, size, or colour, being too close to or beyond the ‘best before’ date, or simply leftovers from over-shopping or ordering (FAO 2019; Ganglbauer et al. 2014). These figures are alarming as the problem of food waste affects all three pillars of sustainability (SUST): the excessive consumption of natural resources and the associated CO₂ pollution threaten the environment, while lost profits and costs of disposal constitute an economic problem. From a normative perspective, food waste has multiple problems as edible food is being thrown away while countless poor people are starving having little or nothing to eat (Ciulli et al. 2020).

Therefore, the question arises of how food waste can be effectively reduced. Literature in this field is growing, yet empirical findings primarily focus on household behaviour (Aktas et al. 2018; Morone et al. 2018; Russell et al. 2017). Only a few researchers have addressed hotels, restaurants, or caterings, indicating a need for further research in the foodservice industry (Betz et al. 2015; Martin-Rios et al. 2018).

One frequently discussed instrument to reduce food waste in businesses are digital food sharing platforms (Michelini et al. 2020). This idea follows the principle of a ‘sharing economy’, in which collaborative consumption over the internet represents the primary goal (Belk 2014). Thereby, ‘sharing-for-money’ models provide online information concerning nearby locations that offer so-called ‘leftover boxes’ (Michelini et al. 2018). The boxes contain surplus food to be picked up by the consumer at a specific time at a reduced price. Hence, monetary food sharing (MFS) provides benefit not only for the consumer but also for the seller, who can generate additional revenues and save disposal costs by reducing waste (Michelini et al. 2018).

Previous studies on food sharing platforms primarily dealt with user descriptions (D'Ambrosi 2018; Harvey et al. 2020; Schanes and Stagl 2019), the effectiveness of waste reduction (Falcone and Imbert 2017; Michelini et al. 2020; Morone et al. 2018) or the underlying business models (Michelini et al. 2018; Zurek 2016); they do not, however, inquire the motivation of consumers to use MFS platforms at all. Hence, this paper intends to fill the gap by contributing to the literature on a (food) sharing economy. It represents one of the first studies that empirically tests the 'sharing-for-money' model, thereby providing a starting point for future research. Furthermore, the study offers insights for marketing strategy development and provides suggestions for improving and developing sustainable business models.

As this paper intends to examine consumer's motives, it first provides a review of the current literature. Subsequently, it conducts an exploratory sequential mixed method design combining in-depth interviews with a quantitative survey.

2 Conceptual framework

2.1 Food waste behaviour

Food waste has to be perceived as a result of an interplay of different food-related behaviours (Quested et al. 2013). However, there exists no common definition of the term 'food waste', as Stangherlin and Barcellos (2018) found when examining 15 definitions in search of a consensus. In the following, this paper refers to 'food waste' as "the wastage of items fit for human consumption – for example, when foods are discarded in the retail trade, in food service, or households because they are regarded as 'suboptimal', when close to the 'best-before' date or due to minor product awns" (Aschemann-Witzel 2016, 409) as this resonates best with the study's authors' understanding. In the literature, various solutions are proposed to combat food waste, including macro-environmental regulations or policies, retailers' engagement, consumer education etc. (Stangherlin and Barcellos 2018).

In academic literature, mainly qualitative study papers have been published dealing with various topics of food waste in households and the food industry (Graham-Rowe et al. 2014; Principato et al. 2015; Radzymińska et al. 2016) as well as more generally with the behaviour of food consumers (Aktas et al. 2018; Russell et al. 2017; Stangherlin and Barcellos 2018). Hermsdorf et al. (2017) are among the few researchers who have published a qualitative study on food waste in the retail sector. Yet, only a small number of household behaviour studies were conducted with quantitative methods (Secondi et al. 2015; Visschers et al. 2016), thereby underlining the need for further research in this field.

2.2 Sharing economy

Sharing is not a new phenomenon but rather was the primary form of trading in earlier times (Koen and Schor 2019). What is new about the concept of a ‘sharing economy’ (Belk 2014) is creating innovative business models towards SUST. An important stimulating factor is the emergence of the internet, with ‘Web 2.0’ enabling user interaction (Belk 2014) and new opportunities for digital platforms (Kaplan and Haenlein 2010). While most people strove to hold onto and own as much as they could in the past, more recently, the trend of common use and collaborative consumption seems to prevail (Belk 2014). For that purpose, different types of sharing platforms have been developed, for instance, for transport, accommodations, tools, and meal sharing (Böcker and Meelen 2017). Sharing platforms also differ in their orientation towards profit or in the type of user groups they address (peer to peer, business to consumer, or consumer to business (Belk 2014; Schor 2016). Growing awareness towards sustainable consumption is another important aspect that supports the sharing economy concept in general (Bardhi and Eckhardt 2012; Möhlmann 2015) and the food sector in particular (Falcone and Imbert 2017; Heinrichs 2013). Remarkably and contrary to the assumption of a close connection between sharing and intended environmental benefits, Schor (2016) found no such links among existing studies. On the other hand, Hamari et al. (2016)

found in their analysis of user's motives to participate in collaborative consumption that SUST, together with enjoyment (ENJ) and economic gains, were the main drivers for usage: this finding represents a good starting point for our research.

2.3 Food sharing

Traditionally, food sharing was based on the exchange within the circle of acquaintances and extended families (Kaplan and Haenlein 2010). Moreover, the term 'food sharing' is often associated with generous offers for people in need, neighbourhood help, and social projects (Davies and Evans 2019). This perception is about to change nowadays, underlining the additional economic and environmental benefits: "Food sharing can lead, in theory, to more efficient use of resources reducing at the same time the amount of waste production" (Falcone and Imbert 2017, 210).

Consequently, the number of academic papers dealing with related topics has increased in recent years. For example, Zurek (2016) assessed the risks and regulations of food sharing on the consumer side; D'Ambrosi (2018) investigated consumers' attitudes towards food sharing practices in Italy and found that sharing platforms still play a limited role there. Falcone and Imbert (2017) pointed out that food sharing does not per se fight food waste on the consumer side: a finding which was confirmed by Morone et al. (2018). Ciulli et al. (2020) analysed the intermediary position of digital platforms in the food supply chain bringing together supply and demand. Michelini et al. (2018) observed the positive impact of new technologies and assigned three business models for food sharing platforms: sharing for charity, sharing for community, and sharing for money. In a similar vein, Michelini et al. (2020) evaluated various business models of food sharing platforms and underlined the potential of digital platforms to connect relevant stakeholders for reducing food waste.

In this context, the ‘sharing for money’ model is receiving growing attention. The concept describes a profit-generating business to consumer model that operates through digital platforms and commonly smartphone apps. Technology is serving as an intermediary for the transaction, in which sharing represents a monetary exchange. The food’s producer or distributor represents the supply side; the demand side is the customer who can obtain online information about nearby locations offering leftover food that can be picked up at a certain time. Thereby, customers generally do not know what the so-called ‘leftover boxes’ contain. This sharing model encompasses several advantages, such as cutting disposal costs and increasing profits by selling the food. Moreover, the model seems to positively affect society as it sensitises people to the amount of food waste and the need to reduce it (Michelini et al. 2018). In the course of this study, the presented food-sharing model will be referred to as ‘*MFS*’.

Since the *MFS* business model is still in its infancy, very few studies deal with the concept. One of these stems from Michelini et al. (2020), who identified four distinct aspects of food sharing on digital platforms: a link between suppliers and customers, communication medium for stakeholders, contribution towards food-related SUST goals, and an offer of products free of charge or for a reduced price. In a similar vein, Schanes and Stagl (2019) identified five key motivations for participating in food sharing: emotions and morality, identity and sense of community, reward, social influence, and instrumentality. Subsuming these results with findings from studies on other digital sharing platforms, three main usage motives emerge:

Economic benefit (EB): The saving of money is a central motivating factor in food sharing (Belk 2010). Hamari et al. (2016) identified it as one of the main drivers for collaborative consumption. Michelini et al. (2018) even observed that discounted prices are the perceived main benefit for consumers when using food sharing models.

SUST orientation: The motivation is based on the assumption that participating in a sharing economy model is perceived as a sustainable way of consumption (Bardhi and Eckhardt 2012;

Möhlmann 2015). In that sense, Hamari et al. (2016) highlighted that a high level of ecological SUST is expected from participating in the sharing economy. The authors thereby assumed that sustainable behaviour is altruistically motivated and is related to ideologies and norms. Accordingly, SUST association is supposed to be the main driver for the usage of (food) sharing platforms (Hamari et al. 2016; Michelini et al. 2020).

Community orientation: Böcker and Meelen (2017) identified social aspects - such as the interaction between stakeholders - as significant factors for participating in food sharing. Bucher et al. (2016) proved the positive relationship between social motives and the sharing attitude and intention. A correlation analysis between motives and usage behaviour by Hawlitschek et al. (2016) showed that sharing enables social experience and is appreciated by users' social environment.

As it is apparent from the literature presented, only little is known about the influential role of consumer motives when participating in food sharing. Hence, this study attempts to fill that gap with a particular focus on digital MFS platforms.

2.4 Theoretical framework

To improve food waste reduction via digital platforms, a sound understanding of consumer motives is a prerequisite. A well-known framework on consumer behaviour is the theory of planned behaviour (TPB) from Ajzen (1991). The target determinant of this model is behavioural intention which is determined by attitude, subjective norms, and perceived behavioural control (Ajzen 1991). The literature has shown that TPB can be applied to behaviour regarding 'sharing economy' and 'food waste' (Aktas et al. 2018; Falcone and Imbert 2017; Roos and Hahn 2019; Russell et al. 2017). As this study aims at explaining behavioural intention towards digital MFS platforms, TPB was applied to develop a semi-structured interview guideline for identifying the usage motives in the qualitative research.

Another vital framework for explaining behaviour is the self-determination theory (SDT) by Deci and Ryan (1985a), focusing on human motivation and personality. The theory distinguishes between extrinsic and intrinsic sources of motivation and the associated degree of self-determination of behaviour. Cognitive evaluation theory (CET) is a sub theory of SDT, comprising differences within and factors that enhance and diminish intrinsic motivation (Deci and Ryan 1985a). Dealing with customer motives, SDT and CET were applied to categorise the qualitative interviews' identified motives and derive further implications from them.

3 Materials and methods

3.1 Mixed-method design

Since little is known about the motives that influence consumers towards MFS usage on digital platforms, this study conducts an exploratory sequential mixed-method study. Mixed-method designs can be applied in different ways but always consist of a qualitative and quantitative part (Creswell and Plano Clark 2011). The study used a 'developmental' approach, also referred to as 'exploratory sequential', which is applied to develop constructs and hypotheses through 'exploratory' qualitative research, followed by moving 'sequentially' to the quantitative survey to check validity (Creswell and Plano Clark 2011). The two approaches were combined within the same research project, complementing each other. The objective of the in-depth interviews was to gather insight into usage motives from regular users, which were then utilized to formulate the hypotheses and develop a standardised quantitative questionnaire. The quantitative online survey's goal was to verify the results among users and non-users to obtain representativeness of the relationship between the identified usage motives and behavioural intention (BI), as suggested by TPB.

3.2 Qualitative study

Semi-structured in-depth expert interviews were conducted to identify the motives of actual MFS users. According to the qualitative research criteria (Tong et al. 2007), experts were interviewed until no new findings arose. Consequently, four frequent users (two male and two female) of the MFS app ‘TooGoodToGo’ were questioned. The interviews were carried out in May 2020 in Germany, limited to telephone interviews due to the Covid-19 pandemic. Each interview took approximately 20 minutes and was recorded audio-visually and transcribed. Based on TPB, the interview guideline included questions on the perceived behavioural control (situation and frequency of app usage), attitude (perceived advantages and disadvantages of the app), subjective norm (other people’s perception), BI (personal motivation to use the app), and outlook (need and suggestions for improvement of the app). The questionnaire items were adopted from previous literature (Ajzen 1991; Deci and Ryan 1985a; Deci and Ryan 1985b). The transcribed interviews were analysed based on the Grounded theory by Corbin and Strauss (1990), using an open and inductive coding approach. Open and inductive coding describes a procedure where the observed data is assigned to categories that are developed in the course of the analysis. Accordingly, all relevant interview passages were highlighted and subsequently paraphrased. Based on paraphrasing, 18 keywords were identified, which were consolidated into seven constructs, resulting in seven hypotheses that are presented in Section 4.1 ‘In-depth interviews’.

3.3 Quantitative study

Based on the findings from the in-depth interviews, a standardised questionnaire was developed – the survey aimed at quantifying the qualitative research results. Participation in the study was not restricted, as both users and non-users of MFS platforms were addressed. Data were collected with an anonymous online survey in June 2020, distributed on social networks and online fan

communities of a well-known food-sharing app. In total, 181 Germans completed the questionnaire. The majority of participants were female (73.9%) and under 35 years (75.7%). Half of the respondents (50.8%) were graduates, had a monthly net income of up to 1,500€ (48.6%), and lived in a city (54.4%). Likewise, 43.3% of the participants referred to themselves as users of digital MFS platforms (see Table I for sample's demographics). The sample was widely representative as it is suggested that 65.4% of women were in charge of food purchases in Germany, legitimating the skewed gender distribution (Max Rubner-Institut 2008).

Insert Table I: Sample's demographic information

The online survey started with the description of a fictional food-sharing app. After that, four questions on the usage of food sharing platforms and food waste behaviour followed. The questions in the central part related to a fictitious MFS app and referred to the seven constructs identified in the in-depth interviews and BI. Each construct was measured with three to five items on a 7-point Likert scale. All items were modified from previous studies (Aldás-Manzano et al. 2009; Bucher et al. 2016; Hamari et al. 2016; Hawlitschek et al. 2016; Pliner and Hobden 1992; Steptoe et al. 1995; van der Heijden 2004). The survey ended with questions on the respondent's demographics. Six people completed the questionnaire as a pre-test.

The study used IBM SPSS Statistics 25 to evaluate the quantitative research. An explorative factor analysis was run to identify patterns within respondents' answers to usage motives (Child 2006). To ensure sampling adequacy, the study ran the Kaiser-Meyer-Olkin test (value of 0.825), the Bartlett test of sphericity (was significant), and the measure of sampling adequacy (values all > 0.5). To interpret the factors, the principal component analysis was conducted using the varimax rotation criterion. Based on similar statements, 45 items were consolidated into eight factors, representing the various usage motives. In the following analyses, the identified motives served as independent variables while BI was regarded as the dependent variable. Based on the extracted factors, a Pearson's correlation analysis was performed to measure linear correlation. Subsequently, a linear

regression analysis was carried out to determine the degree of correlation between the variables and to test the study's hypotheses. The study met all requirements of the Gauss-Markov theorem: metric scale level, variance and causality of the variables, no multicollinearity (variance inflation factor ranged between 1.025 and 1.700), no autocorrelation (Durbin-Watson statistics [1.28 - 1.55]), normal distribution of residuals, homoscedasticity, and linearity.

4 Results

4.1 In-depth interviews

The interview participants mentioned various aspects of using digital MFS platforms. The qualitative content analysis identified seven constructs influencing the experts: EB, convenience (CV), SUST, desire for exploration (DEXP), ENJ, social risk (SR), and food neophobia (FN). In the following, the constructs were described in more detail, and hypotheses for the quantitative survey were formulated. Based on SDT and CET, the usage motives were assigned to extrinsic or intrinsic motivation towards consumer behaviour to derive further implications.

EB: The interviews showed that EB of food sharing matters, as all interviewees mentioned that they could save money when buying the price reduced food leftovers. The participants noted that *"it is an advantage that I can get good food for less money"* (P2), that *"it is good that [the food] is much cheaper than usual"* (P3) or *"that one can save money because it is just a lot cheaper"* (P4). However, saving money seems not the most crucial motive as none of the experts mentioned it first. P1 even said that *"it's nice that [the food] is discounted, but it doesn't have to be"*. EB can be attributed to extrinsically motivated actions as they are driven by external rewards arising from outside (Deci & Ryan, 1980). Thus, the study hypothesises as follows:

H1: Perceived EB of MFS positively influences the behavioural intention to use digital MFS platforms.

CV: According to all expert interviews, comfort and CV were reasons for using the app, as the following interview excerpt illustrates: *“I don't have to worry about what I eat anymore. I just take a look at the app and choose something” (P4)*, *“either I don't feel like cooking myself or I don't have time to cook myself” (P1)* and *“another advantage is that you don't have to cook and prepare yourself” (P3)*. Accordingly, the construct of CV is defined as not having to cook for oneself and worry about food preparation. The construct is conceptualized as intrinsic motivation because of the high degree of self-determination of the behaviour (Deci and Ryan 1980). Consequently, the second hypothesis reads as follows:

H2: Perceived CV of MFS positively influences the behavioural intention to use digital MFS platforms.

SUST: All experts mentioned SUST as a motivating factor and took up the food waste problem: *“I save food from being thrown away” (P1)*, *“It is so shocking [how much food] is thrown away, and if you are not consciously aware of it, then there is such a rut” (P2)*, *“I think it's good that companies don't have to throw away food and I like to support that” (P3)* and *“you know [the food] will be thrown away otherwise” (P4)*. As a further consequence, two experts even said that they felt good because they contributed to environmental protection: *“It goes without saying that the feeling when you buy something plays a role in having done something good” (P1)* and *“You feel good about it” (P4)*. However, the importance differed between the respondents. *P3*, for example, named SUST as a significant influencing factor: *“I'm critical of the throwaway society, and that's why I like the system, and the SUST aspect has influenced me”*. *P1*, on the other hand, rated the construct less relevant: *“The SUST aspect is not a priority for me”*. *P2* was even critical of the SUST aspect, noting that *“there is always so much packaging waste”*, contradicting the SUST concept of food

sharing. The study identified SUST as an intrinsic motivation to act sustainably. Yet, the study hypothesises the following:

H3: Perceived SUST of MFS positively influences the behavioural intention to use digital MFS platforms.

DEXP: All experts mentioned that food sharing appeals to them as a positive incentive to experience something new, as the following interview excerpts show: *“Through the app, I have found new restaurants and, so to speak, run a restaurant test”* (P2) and *“I want to try something new. I’m the experience person who thinks [those food-sharing platforms are] good”* (P1). Besides, DEXP represents a valued surprise experience for the users, as it is unknown what the leftover boxes will contain. Expert P3 substantiated: *“Surprise packs are good because you can try out several things”* and P4 stated that *“in all facilities, I found these sample packs quite good because they often contained great things. At one of them, I even repurchased something afterwards, not through [the app].”* DEXP is perceived as intrinsically rewarding by the prospect of exciting and new experiences. Therefore, the study develops the hypothesis that:

H4: Perceived DEXP positively influences the behavioural intention to use digital MFS platforms.

ENJ: The interviews revealed that the experts describe the app as *“something positive and cool”* (P2), pointing out that *“the way the app is working is really enjoyable”* (P4). P2 further explained that *“when I use the app, it feels excellent. Like a win-win situation”* and also P3 said that *“I think the app is pretty good”*. Ryan and Deci (Deci and Ryan 1985b) mentioned that ENJ is a crucial intrinsic motivation that is caused by the activity itself and thus people’s desire to use those digital platforms. Consequently, the fifth hypothesis reads as follows:

H5: Perceived ENJ of MFS positively influences the behavioural intention to use digital MFS platforms.

SR: SR is defined as “the possibility of attracting unfavourable attention and response from purchasing a particular product” (Aldás-Manzano et al. 2009, 56). Three out of four experts stated that they feel uncomfortable when picking up the foods: *“like a rummage sale at the supermarket...that’s how I sometimes fee”* (P3). P2 even felt *“being a burden to the seller’* by using the app as *‘the sellers reacted strangely when picking up the food’*. P2 attributed this to the fact that usually no tips are given and that the shops have extra work to pack up the boxes. Also, P4 confirms that *“one feels a bit strange in the shop”*. SR is determined as extrinsic motivation. Consequently, the construct of SR initiates the following hypothesis:

H6: Perceived SR of MFS negatively influences the behavioural intention to use digital MFS platforms.

FN: The term FN refers to an aversion to eating and/or avoiding novel foods (Pliner and Hobden 1992). The study determined ‘novel foods’ as unfamiliar foods that were not selected by oneself. Accordingly, this construct can have a negative influence and an inhibiting effect on consumer behaviour. Yet, it seems to be a relatively rare phenomenon when using digital monetary food-sharing platforms. Only expert P3 argued *“that people think [the food is] not so fresh anymore”* and *“I’m afraid [the food] won’t taste good and I’m not satisfied”*. He also mentioned that he had food in the boxes that were probably not that popular and therefore not so tasty, explaining his concerns. The construct of FN is conceptualized as intrinsic motivation. The last hypothesis reads as follows:

H7: FN towards MFS negatively influences the behavioural intention to use digital MFS platforms.

4.2 Online survey

An explorative factor analysis with 45 items was carried out to examine the independence of the identified motives. Although the analysis indicated twelve factors with eigenvalues greater than 1.0, a ten-factor solution was preferred due to the scree plot and theoretical considerations, which

explained 70.7% of the variance. Also, the varimax rotation demonstrated that the items load on ten factors (Table II). Six out of eight factors (EB, SUST, DEXP, ENJ, SR and BI) fulfilled the reliability requirements with a Cronbach's alpha of at least 0.7. For the factors CV and FN, Cronbach's alpha was slightly smaller than 0.7, however, showing reliability in terms of content (Table III). In conclusion, eight factors were considered in Pearson's correlation and linear regression analysis: EB, CV, SUST, DEXP, ENJ, SR, FN, and BI.

Insert Table II: Factor loadings for usage motives of digital MFS platforms

The study checked possible correlations by using the Pearson correlation coefficient (see Table III). The dependent variable BI had a significantly positive correlation with EB, SUST, ENJ and DEXP. Linear regression analysis was carried out to determine the degree of correlation and to test the hypotheses. The correlation coefficient R determined the strength of the linear correlations. Accordingly, among the extrinsic motives, the study found that EB had a significant positive effect ($\beta = 0.346$, $p < .001$) and SR had no significant negative effect ($\beta = -0.084$, $p = 0.261$) on the BI to use the digital platforms. For intrinsic motivations, the effects on BI were found as follows: CV no significant positive effect ($\beta = 0.110$, $p = 0.139$), SUST significant positive effect ($\beta = 0.279$, $p < .001$), ENJ significant positive effect ($\beta = 0.574$, $p < .001$), DEXP significant positive effect ($\beta = 0.616$, $p < .001$), FN no significant negative effect ($\beta = -0.128$, $p = 0.085$). Consequently, while EB ($R^2 = .120$, $F(179) = 24.36$, $p < .001$), SUST ($R^2 = .078$, $F(179) = 15.07$, $p < .001$), ENJ ($R^2 = .330$, $F(1, 179) = 88.15$, $p < .001$) and DEXP ($R^2 = .380$, $F(179) = 109.66$, $p < .001$) explained a significant part of the variance in scores on BI, SR ($R^2 = .007$, $F(179) = 1.26$, $p = .261$), CV ($R^2 = .012$, $F(179) = 2.21$, $p = .139$) and FN ($R^2 = .020$, $F(179) = 2.99$, $p = .085$) did not. Thus, hypotheses *H1*, *H3*, *H4*, and *H5* were accepted while *H2*, *H6*, and *H7* were rejected. When comparing the results of the regression analyses of the two subsets 'users' and 'non-users' with the entire sample, no significant differences were observed, indicating no differences in usage motives.

Insert Table III: Pearson correlations, Cronbach's alpha, and Linear regression

5 Discussion

5.1 Motives for the usage of digital MFS platforms

The qualitative research identified seven usage motives (EB, CV, SUST, DEXP, ENJ, SR, and FN) of digital MFS platforms; EB, SUST, DEXP, and ENJ were found to have a significant influence on BI in the quantitative research. In the following, the four significant motives are examined in more detail.

Based on the conceptual integration of TPB, SDT and CET and the empirical findings, the study assumes that intrinsic motivation, including the constructs of SUST, DEXP and ENJ, has a significantly strong influence on BI to use digital MFS platforms, whereas extrinsic motivation, such as EB, had only a significantly medium influence. Consistent with SDT's key assumption that the factors influencing individuals' choices are primarily based on intrinsic motivation, the study expects the consumers to act mostly intrinsically motivated to satisfy their personal desire to explore and enjoy rather than a predominantly sustainable and monetary motivation. According to the TPB, all significantly positive motives (see *H1*, *H3*, *H4* and *H5*) can be assigned to the determinant 'attitude'. The inhibiting motives (see *H6* and *H7*) generated from the determinant 'social norms' had no significant influence on BI. Since previous research demonstrated that TPB could be applied to predict customers intention to engage in the sharing economy (Falcone and Imbert 2017; Roos and Hahn 2019), the correlated BI is expected to result in the actual behaviour of using digital MFS platforms. Correspondingly, the study suggests that the motives DEXP, SUST, ENJ and EB are the main drivers to participate in the sharing offer.

DEXP seems to have the most significant positive influence on BI. This finding is in line with a study from Baumgartner and Steenkamp (1996), who dealt with the curiosity in customer behaviour to try something new. The authors found that the 'exploratory acquisition of products' is strongly associated with sensory stimulation, e.g., risk-taking and inherent interest in innovations, thereby

relating to active variety seeking. Reizenzein (2000) further explained that the degree of unexpectedness is decisive for the intensity of the perceived surprise and influences the positive surprise experience. It can be concluded that the curiosity to experience uncertainty in the leftover boxes, thereby discovering new (food) locations and having a surprise experience, is a strong motive for the usage of MFS. This could be related to ‘experience-oriented behaviour’, leading to a positive mood and higher shopping satisfaction through greater enjoyment (Wolfenbarger and Gilly 2001).

The study further indicates that SUST positively influences BI but with a smaller correlation than initially assumed. This result was unexpected, as the SUST aspect is the promoted key concept of existing MFS platforms, aiming at ‘saving food’ and promoting sustainable development regarding food waste. According to Graham-Rowe et al. (2014), the motive to do the ‘right thing’ was the second most important influencing factor after economic motivation. Hamari et al. (2016) even found perceived SUST as the most crucial factor influencing attitude towards collaborative consumption. Three underlying reasons might hinder people from consuming sustainably, leading to contradictory results: economic rationalizations, institutional dependencies, and developmental realism (Eckhardt et al. 2010). In this context, Micheline et al. (2020) changed the perspective as that they examined whether SUST can serve not only as a motivator but also as an output. Accordingly, the authors claimed that using food-sharing platforms could trigger sustainable solutions to tackle food waste reduction and efficient use of resources. In summary, consumers take the SUST aspect into account, which influences their attitude towards digital MFS platforms. Yet, it only slightly affects people’s actions towards the usage of the respective platforms.

Moreover, the results suggest that the intrinsic motivation of ENJ plays an essential role in influencing BI by affecting the individual’s attitude. Some people might use the MFS platforms because they simply enjoy it. This finding is consistent with the study of Hamari et al. (2016). They observed that participation in collaborative consumption is motivated by ENJ from the activity,

which in turn influences the attitude and intention to use respective platforms. Similar studies on digital platforms that provide shared accommodation (Sung et al. 2018) and shared transport (Lee et al. 2018) also reported that ENJ positively affected consumers' attitude to participate in the sharing economy.

Consistent with the study's assumption, the extrinsic motivation of EB positively influenced BI, but in a rather moderate context. This finding concurs with studies that determined the incentive to save money as one of the participants' main objectives (Falcone and Imbert 2017; Michelini et al. 2018). Interestingly, so far, only studies on food sharing in the non-profit sector concluded similar results, such as Ganglbauer et al. (2014), who analysed that only a minority of users participate in food sharing because of an economic need. The authors trace this back to feelings of shame that might hinder people from using the platforms.

5.2 Theoretical implications

From a theoretical perspective, this study provides empirical evidence on German customers' motives for using digital MFS platforms, thereby contributing to the literature on sharing economy, focusing on the 'sharing-for-money' model of food sharing (Michelini et al. 2018). Another theoretical contribution is that the paper suggests a more significant influence of the desire to explore new food than previous literature which assigned the greatest importance to the perceived EB (Belk 2010; Michelini et al. 2018), providing a starting point for future research. Lastly, and to the best of our knowledge, this is one of the first studies that empirically tests customers' usage motives for digital MFS platforms, as previous papers primarily focused on user descriptions (D'Ambrosi 2018; Harvey et al. 2020; Schanes and Stagl 2019) and the effectiveness of waste reduction (Falcone and Imbert 2017; Michelini et al. 2020; Morone et al. 2018).

5.3 Managerial implications

This research proposes several implications for different stakeholders to reduce food waste in the foodservice industry by promoting digital MFS platforms (Betz et al. 2015; Martin-Rios et al. 2018).

First, government authorities are suggested to encourage new and innovative business models, such as MFS, by launching subsidy programs that invest in food rescue organisations. Governments should also create new regulatory frameworks that make overproduction, and disproportionate amounts of food waste more transparent - as food sharing initiatives may save food from being thrown away but do not solve the fundamental problem of food oversupply in society (Ciaghi and Villafiorita 2016). Corresponding measures could incentivize organizations to donate surplus and good quality food approaching the 'best-before' date. Finally, politics could use information campaigns to draw attention to the problem of and possible solutions to food waste.

Second, food sharing platform operators should offer exploratory experiences to increase platform usage. Therefore, the 'surprise factor' of not knowing what food to receive and the possibility to try out new things should be highlighted to the consumers. Operators may promote the experience of getting to know new food locations and unexpected dishes. The study also implicates that operators do not need to overemphasize the SUST aspect in marketing. However, since the mission of the business model is SUST (Falcone and Imbert 2017; Heinrichs 2013), operators should encourage business partners to address SUST in every canvas, e.g., by local supply chains, reusable and recyclable packaging, or eco-friendly and healthy dishes. To increase the usage of MFS platforms and reduce food waste, operators may implement lock-in effects to create long-term customer relationships and expand the concept to smaller towns, as most services are only available in urban areas.

Finally, MFS seems very interesting from an economic point of view. Contrary to the opinion of Michelini et al. (2018), we do not see MFS limiting but rather complementing food sharing models that promote social welfare. Unlike food donations, MFS is much more attractive to the supply side. It generates additional income, presumably leading to a significantly higher acceptance and range of coverage among the foodservice industry. Since MFS users pay for the food, it is further assumed that customers expect higher quality and professionalism, e.g., unique experience or service. In addition, MFS providers could simultaneously run food donation projects, in which food is donated that could not be sold through the monetary business model. Either way, food sharing increases public awareness of food wastage and promotes its reduction (Michelini et al. 2018), thereby helping organisations pursue their corporate SUST goals.

6 Conclusion

This study presents one of the first findings in the under-researched field of MFS by empirically examining the ‘sharing-for-money’ model with a mixed-method approach. Four in-depth interviews and an online survey analysed the motives that influence customers towards using digital MFS platforms. The findings revealed that DEXP had the most significant influence on BI, followed by ENJ, EB, and SUST. Accordingly, intrinsic motivation seems to have a stronger influence on BI than extrinsic motivation. To promote MFS and reduce food waste in the long run, this paper provides valuable insights into consumers’ usage motives, offering a basis for governmental support, marketing strategy development, and suggestions for improvement and growth.

However, this study is not without limitations. The mixed-method research needed a high volume of time and capacity. Accordingly, the sample is relatively small, comprising four expert interviews and 181 completed quantitative questionnaire. Even though the number of expert interviews seemed sufficient, as no new findings arose (Tong et al. 2007), future research should take more time to

collect the data and increase the sample of both studies. Despite the argument that more women are responsible for grocery shopping, a gender-balanced distribution of the sample would be desirable. The selected sample consisted of users and non-users in Germany. Consequently, it would improve the representativeness if only actual users were surveyed. Other countries could also be considered, enabling a cross-country comparison. Although this study has taken a significant first step in examining the influencing motives for using digital MFS platforms, more detailed research is required in the future. A structural equation model should be developed to gain deeper insights, which allows the estimation and testing of correlations and hidden structures.

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References

- Ajzen, Icek (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50 (2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T).
- Aktas, Emel/Sahin, Hafize/Topaloglu, Zeynep/Oledinma, Akunna/Huda, Abul/Irani, Zahir/Sharif, Amir/van't Wout, Tamara/Kamrava, Mehran (2018). A consumer behavioural approach to food waste. *Journal of Enterprise Information Management* 31 (5), 658–673. <https://doi.org/10.1108/JEIM-03-2018-0051>.
- Aldás-Manzano, Joaquín/Lassala-Navarré, Carlos/Ruiz-Mafé, Carla/Sanz-Blas, Silvia (2009). The role of consumer innovativeness and perceived risk in online banking usage. *International Journal of Bank Marketing* 27 (1), 53–75. <https://doi.org/10.1108/02652320910928245>.
- Aschemann-Witzel, Jessica (2016). FOOD WASTE. Waste not, want not, emit less. *Science* (New York, N.Y.) 352 (6284), 408–409. <https://doi.org/10.1126/science.aaf2978>.
- Bardhi, Fleura/Eckhardt, Giana M. (2012). Access-Based Consumption: The Case of Car Sharing: Table 1. *Journal of Consumer Research* 39 (4), 881–898. <https://doi.org/10.1086/666376>.
- Baumgartner, Hans/Steenkamp, Jan-Benedict E.M. (1996). Exploratory consumer buying behavior: Conceptualization and measurement. *International Journal of Research in Marketing* 13 (2), 121–137. [https://doi.org/10.1016/0167-8116\(95\)00037-2](https://doi.org/10.1016/0167-8116(95)00037-2).
- Belk, Russell (2010). Sharing: Table 1. *Journal of Consumer Research* 36 (5), 715–734. <https://doi.org/10.1086/612649>.
- Belk, Russell (2014). You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research* 67 (8), 1595–1600. <https://doi.org/10.1016/j.jbusres.2013.10.001>.

- Betz, Alexandra/Buchli, Jürg/Göbel, Christine/Müller, Claudia (2015). Food waste in the Swiss food service industry - Magnitude and potential for reduction. *Waste management* (New York, N.Y.) 35, 218–226. <https://doi.org/10.1016/j.wasman.2014.09.015>.
- Böcker, Lars/Meelen, Toon (2017). Sharing for people, planet or profit? Analysing motivations for intended sharing economy participation. *Environmental Innovation and Societal Transitions* 23, 28–39. <https://doi.org/10.1016/j.eist.2016.09.004>.
- Bucher, Eliane/Fieseler, Christian/Lutz, Christoph (2016). What's mine is yours (for a nominal fee) – Exploring the spectrum of utilitarian to altruistic motives for Internet-mediated sharing. *Computers in Human Behavior* 62, 316–326. <https://doi.org/10.1016/j.chb.2016.04.002>.
- Child, Dennis (2006). *The essentials of factor analysis*. 3rd ed. London, Continuum.
- Ciaghi, Aaron/Villafiorita, Adolfo (2016). Beyond food sharing: Supporting food waste reduction with ICTs. In: *2016 IEEE International Smart Cities 2016*, 1–6.
- Ciulli, Francesca/Kolk, Ans/Boe-Lillegraven, Siri (2020). Circularity Brokers: Digital Platform Organizations and Waste Recovery in Food Supply Chains. *Journal of Business Ethics* 167 (2), 299–331. <https://doi.org/10.1007/s10551-019-04160-5>.
- Corbin, Juliet M./Strauss, Anselm (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology* 13 (1), 3–21. <https://doi.org/10.1007/BF00988593>.
- Creswell, John W./Plano Clark, Vicki L. (2011). *Designing and conducting mixed methods research*. 2nd ed. Los Angeles/London/New Dehli/Singapore/Washington DC, Sage.
- D’Ambrosi, Lucia (2018). Pilot study on food sharing and social media in Italy. *British Food Journal* 120 (5), 1046–1058. <https://doi.org/10.1108/BFJ-06-2017-0341>.

- Davies, Anna/Evans, David (2019). Urban food sharing: Emerging geographies of production, consumption and exchange. *Geoforum* 99, 154–159.
<https://doi.org/10.1016/J.GEOFORUM.2018.11.015>.
- Deci, Edward L./Ryan, Richard M. (1980). The Empirical Exploration of Intrinsic Motivational Processes. In: *Advances in Experimental Social Psychology* Volume 13. Elsevier, 39–80.
- Deci, Edward L./Ryan, Richard M. (1985a). Cognitive Evaluation Theory. In: Edward L. Deci/Richard M. Ryan (Eds.). *Intrinsic Motivation and Self-Determination in Human Behavior*. Boston, MA, Springer US, 43–85.
- Deci, Edward L./Ryan, Richard M. (1985b). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality* 19 (2), 109–134.
[https://doi.org/10.1016/0092-6566\(85\)90023-6](https://doi.org/10.1016/0092-6566(85)90023-6).
- Eckhardt, Giana M./Belk, Russell/Devinney, Timothy M. (2010). Why don't consumers consume ethically? *Journal of Consumer Behaviour* 9 (6), 426–436. <https://doi.org/10.1002/cb.332>.
- European Commission (2016). Food Waste. Available online at https://ec.europa.eu/food/safety/food_waste_en (accessed 4/14/2021).
- Falcone, Pasquale Marcello/Imbert, Enrica (2017). Bringing a Sharing Economy Approach into the Food Sector: The Potential of Food Sharing for Reducing Food Waste. In: Piergiuseppe Morone/Franka Papendiek/Valentina Elena Tartiu (Eds.). *Food Waste Reduction and Valorisation*. Cham, Springer International Publishing, 197–214.
- FAO (2019). State of Food and Agriculture 2019. Moving forward on food loss and waste reduction. Available online at <http://www.fao.org/3/ca6030en/ca6030en.pdf> (accessed 4/14/2021).

- Ganglbauer, Eva/Fitzpatrick, Geraldine/Subasi, Özge/Güldenpfennig, Florian (2014). Think globally, act locally: a case study of a free food sharing community and social networking. Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing. <https://doi.org/10.1145/2531602.2531664>.
- Graham-Rowe, Ella/Jessop, Donna C./Sparks, Paul (2014). Identifying motivations and barriers to minimising household food waste. *Resources, Conservation and Recycling* 84, 15–23. <https://doi.org/10.1016/j.resconrec.2013.12.005>.
- Hamari, Juho/Sjöklint, Mimmi/Ukkonen, Antti (2016). The sharing economy: Why people participate in collaborative consumption. *Journal of the Association for Information Science and Technology* 67 (9), 2047–2059. <https://doi.org/10.1002/asi.23552>.
- Harvey, John/Smith, Andrew/Goulding, James/Branco Illodo, Ines (2020). Food sharing, redistribution, and waste reduction via mobile applications: A social network analysis. *Industrial Marketing Management* 88, 437–448. <https://doi.org/10.1016/j.indmarman.2019.02.019>.
- Hawlitsek, Florian/Teubner, Timm/Gimpel, Henner (2016). Understanding the Sharing Economy - Drivers and Impediments for Participation in Peer-to-Peer Rental. In: 49th Hawaii International Conference 2016, 4782–4791.
- Heinrichs, Harald (2013). Sharing Economy: A Potential New Pathway to Sustainability. *GAIA - Ecological Perspectives for Science and Society* 22 (4), 228–231. <https://doi.org/10.14512/gaia.22.4.5>.
- Hermsdorf, David/Rombach, Meike/Bitsch, Vera (2017). Food waste reduction practices in German food retail. *British Food Journal* 119 (12), 2532–2546. <https://doi.org/10.1108/BFJ-06-2017-0338>.

Kaplan, Andreas M./Haenlein, Michael (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons* 53 (1), 59–68.

<https://doi.org/10.1016/j.bushor.2009.09.003>.

Koen, Frenken/Schor, Juliet (2019). Putting the sharing economy into perspective. A research agenda for sustainable consumption governance. Edward Elgar Publishing.

Lee, Zach W.Y./Chan, Tommy K.H./Balaji, M. S./Chong, Alain Yee-Loong (2018). Why people participate in the sharing economy: an empirical investigation of Uber. *Internet Research* 28 (3), 829–850. <https://doi.org/10.1108/IntR-01-2017-0037>.

Martin-Rios, Carlos/Demen-Meier, Christine/Gössling, Stefan/Cornuz, Clémence (2018). Food waste management innovations in the foodservice industry. *Waste management* (New York, N.Y.) 79, 196–206. <https://doi.org/10.1016/j.wasman.2018.07.033>.

Max Rubner-Institut (2008). Nationale Verzehrsstudie II. Ergebnisbericht Teil 2. Die bundesweite Befragung zur Ernährung von Jugendlichen und Erwachsenen. Available online at https://www.mri.bund.de/fileadmin/MRI/Institute/EV/NVSII_Abschlussbericht_Teil_2.pdf (accessed 4/14/2021).

Michelini, Laura/Grieco, Cecilia/Ciulli, Francesca/Di Leo, Alessio (2020). Uncovering the impact of food sharing platform business models: a theory of change approach. *British Food Journal* 122 (5), 1437–1462. <https://doi.org/10.1108/BFJ-06-2019-0422>.

Michelini, Laura/Principato, Ludovica/Iasevoli, Gennaro (2018). Understanding Food Sharing Models to Tackle Sustainability Challenges. *Ecological Economics* 145, 205–217. <https://doi.org/10.1016/j.ecolecon.2017.09.009>.

- Möhlmann, Mareike (2015). Collaborative consumption: determinants of satisfaction and the likelihood of using a sharing economy option again. *Journal of Consumer Behaviour* 14 (3), 193–207. <https://doi.org/10.1002/cb.1512>.
- Morone, Piergiuseppe/Falcone, Pasquale Marcello/Imbert, Enrica/Morone, Andrea (2018). Does food sharing lead to food waste reduction? An experimental analysis to assess challenges and opportunities of a new consumption model. *Journal of Cleaner Production* 185, 749–760. <https://doi.org/10.1016/j.jclepro.2018.01.208>.
- Pliner, Patricia/Hobden, Karen (1992). Development of a scale to measure the trait of food neophobia in humans. *Appetite* 19 (2), 105–120. [https://doi.org/10.1016/0195-6663\(92\)90014-W](https://doi.org/10.1016/0195-6663(92)90014-W).
- Principato, Ludovica/Secondi, Luca/Pratesi, Carlo Alberto (2015). Reducing food waste: an investigation on the behaviour of Italian youths. *British Food Journal* 117 (2), 731–748. <https://doi.org/10.1108/BFJ-10-2013-0314>.
- Quested, T. E./Marsh, E./Stunell, D./Parry, A. D. (2013). Spaghetti soup: The complex world of food waste behaviours. *Resources, Conservation and Recycling* 79, 43–51. <https://doi.org/10.1016/j.resconrec.2013.04.011>.
- Radzymińska, Monika/Jakubowska, Dominika/Staniewska, Katarzyna (2016). CONSUMER ATTITUDE AND BEHAVIOUR TOWARDS FOOD WASTE. *Journal of Agribusiness and Rural Development* 10 (1). <https://doi.org/10.17306/JARD.2016.20>.
- Reisenzein, R. (2000). *The subjective experience of surprise*. Taylor & Francis Ltd; 1. Edition.
- Roos, Daniel/Hahn, Rüdiger (2019). Understanding Collaborative Consumption: An Extension of the Theory of Planned Behavior with Value-Based Personal Norms. *Journal of Business Ethics* 158 (3), 679–697. <https://doi.org/10.1007/s10551-017-3675-3>.

- Russell, Sally V./Young, C. William/Unsworth, Kerrie L./Robinson, Cheryl (2017). Bringing habits and emotions into food waste behaviour. *Resources, Conservation and Recycling* 125, 107–114. <https://doi.org/10.1016/j.resconrec.2017.06.007>.
- Schanes, Karin/Stagl, Sigrid (2019). Food waste fighters: What motivates people to engage in food sharing? *Journal of Cleaner Production* 211, 1491–1501. <https://doi.org/10.1016/J.JCLEPRO.2018.11.162>.
- Schor, Juliet (2016). Debating the Sharing Economy. *Journal of Self-Governance Management Economics* 4 (3), 7–22. <https://doi.org/10.22381/JSME4320161>.
- Secondi, Luca/Principato, Ludovica/Laureti, Tiziana (2015). Household food waste behaviour in EU-27 countries: A multilevel analysis. *Food Policy* 56, 25–40. <https://doi.org/10.1016/j.foodpol.2015.07.007>.
- Stangherlin, Isadora do Carmo/Barcellos, Marcia Dutra de (2018). Drivers and barriers to food waste reduction. *British Food Journal* 120 (10), 2364–2387. <https://doi.org/10.1108/BFJ-12-2017-0726>.
- Step toe, A./Pollard, T. M./Wardle, J. (1995). Development of a measure of the motives underlying the selection of food: the food choice questionnaire. *Appetite* 25 (3), 267–284. <https://doi.org/10.1006/appe.1995.0061>.
- Sung, Eunsuk/Kim, Hongbum/Lee, Daeho (2018). Why Do People Consume and Provide Sharing Economy Accommodation?—A Sustainability Perspective. *Sustainability* 10 (6), 2072. <https://doi.org/10.3390/su10062072>.
- Tong, Allison/Sainsbury, Peter/Craig, Jonathan (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups.

International journal for quality in health care : journal of the International Society for Quality in Health Care 19 (6), 349–357. <https://doi.org/10.1093/intqhc/mzm042>.

van der Heijden (2004). User Acceptance of Hedonic Information Systems. *MIS Quarterly* 28 (4), 695. <https://doi.org/10.2307/25148660>.

Visschers, Vivianne H.M./Wickli, Nadine/Siegrist, Michael (2016). Sorting out food waste behaviour: A survey on the motivators and barriers of self-reported amounts of food waste in households. *Journal of Environmental Psychology* 45, 66–78. <https://doi.org/10.1016/j.jenvp.2015.11.007>.

Wolfenbarger, Mary/Gilly, Mary C. (2001). Shopping Online for Freedom, Control, and Fun. *California Management Review* 43 (2), 34–55. <https://doi.org/10.2307/41166074>.

Zurek, Karolina (2016). Food Sharing in Europe: Between Regulating Risks and the Risks of Regulating. *European Journal of Risk Regulation* 7 (4), 675–687. <https://doi.org/10.1017/S1867299X00010114>.

Tables

		Count	%
Proband	User	78	43.2%
	Non-User	103	56.8%
Gender	Female	134	73,9%
	Male	47	26,1%
Age	18 – 24 years	65	35.9%
	25 – 34 years	72	39.8%
	35 – 44 years	9	5.0%
	45 – 54 years	11	6.1%
	55 – 64 years	23	12.7%
	>65 years	1	0.5%
Education	Middle school	20	11.0%
	High school	60	33.1%
	Graduate	92	50.8%
	Others	9	5.1%
Job	Pupil	5	2.8%
	Trainee	5	2.8%
	Student	77	42.2%
	Employee	74	41.1%
	Self-employed	11	6.1%
	Others	9	5.0%
Monthly net income	<499€	25	13,8%
	500-1,500€	63	34,8%
	1501-3,000€	47	26,0%
	3001-4,500€	14	7,7%
	4501-6,000€	10	5,5%
	>6,000	7	3,9%
	Others	15	8,3%
Home	City	99	54,5%
	Small town	51	28,3%
	Country side	31	17,2%

Table I: Sample's demographic information

Item	Statement	Loading
EB1	I can save money if I use the app.	0.791
EB2	My participation in the app benefits me financially.	0.812
EB3	My participation in the app can improve my economic situation.	0.800
EB4	My participation in the app saves me time.	0.417
CV1	It is important for me that the food I get via the app is easy to receive.	0.372
CV2	It is important for me that I do not have to cook because of the app.	0.792
CV3	It is important for me that the food I get via the app takes me no time to prepare.	0.816
CV4	It is important for me that the food I get via the app can be bought close to where I live or work.	0.541
CV5	It is important for me that the availability of the food I get via the app is high.	0.589
SUST1	The usage of the app helps to save natural resources.	0.811
SUST2	Using the app is a sustainable model of consumption.	0.783
SUST3	Using the app is ecological.	0.877
SUST4	The app is efficient in terms of using resources.	0.793
SUST5	Using the app is environmentally friendly.	0.762
ENJ1	I think using the app is enjoyable.	0.732
ENJ2	I think using the app is exciting.	0.811
ENJ3	I think using the app is fun.	0.793
ENJ4	I think using the app is interesting.	0.648
ENJ5	I think using the app is pleasant.	0.430
DEXP1	The app is a good opportunity for me to try out new restaurants/cafes/bakeries.	0.723
DEXP2	The app is a good opportunity for me to try out new food.	0.735
DEXP3	I consider it positive that I cannot decide in advance which food I will get.	0.618
DEXP4	Because of the app, I will try new restaurants/cafes/bakeries.	0.388
DEXP5	I like to be surprised.	0.409
SR1	I think using the app degrades the image that other people have of me.	0.855
SR2	Some people think I am not acting correctly when I use the app.	0.899
SR3	People think that I am misbehaving if I use the app instead of buying regular takeaway food.	0.881
FN1	I like food from different cultures.	0.669
FN2	I'm afraid to eat things that I have never had before.	0.817
FN3	I am constantly sampling new and different food.	0.738
FN4	If I don't know what food I will get, I won't try it.	0.606
BI1	I expect to continue using the app often in the future.	0.796
BI2	I can see myself engaging in the app more frequently in the future.	0.775
BI3	I can see myself increasing my app activities if possible.	0.749

BI4	Likely, I will frequently use such an app in the future.	0.786
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Abbreviations: EB, economic benefit; CV, convenience; SUST, sustainability; ENJ, enjoyment, DEXP, desire for exploration; SR, social risk; FN, food neophobia; BI, behavioural intention.

Table II: Factor loadings for usage motives of digital monetary food sharing platforms

	Mean	SD	EB	CV	SUST	ENJ	DEXP	SR	FN	BI
EB	4,96	1,11	(0,793)							
CV	5,02	0,99	,295**	(0,694)						
SUST	5,85	0,91	,434**	,246**	(0,908)					
ENJ	4,91	1,16	,392**	,283**	,446**	(0,862)				
DEXP	5,36	1,06	,371**	,210**	,278**	,520**	(0,802)			
SR	2,02	1,24	0,031	-0,021	-0,040	-0,017	-0,084	(0,86)		
FN	4,21	0,56	-0,140	0,051	-0,104	-0,063	-,195**	0,060	(0,692)	
BI	5,22	1,4	,346**	0,110	,279*	,574*	,616*	-0,084	-0,128	(0,939)

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Abbreviations: EB, economic benefit; CV, convenience; SUST, sustainability; ENJ, enjoyment; DEXP, desire for exploration; SR, social risk; FN, food neophobia; BI, behavioural intention; SD, standard deviation.

Table III: Pearson correlations, Cronbach's alpha, and Linear regression

Keywords

- food waste
- food waste reduction
- sustainability
- sharing economy
- food sharing
- monetary food sharing
- sharing platform
- business model innovation
- theory of planned behaviour
- customer motives
- mixed-method approach